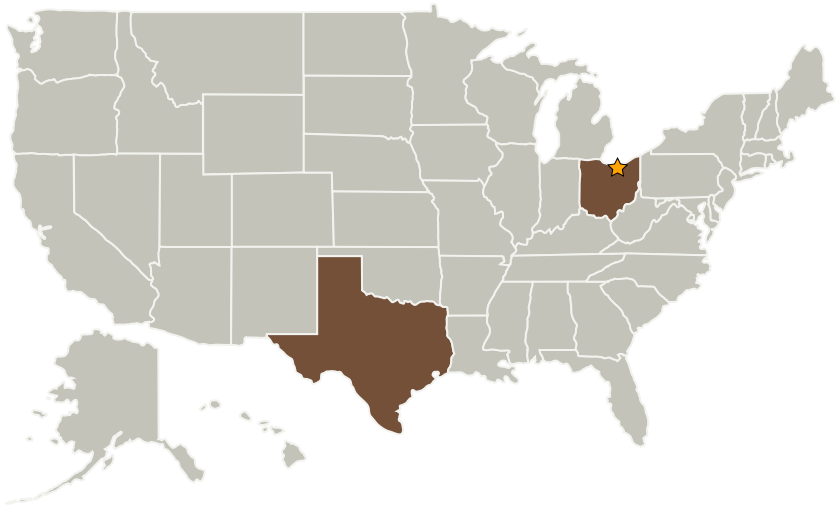
Software Defined Common Processing System (SDCPS), Phase I

Completed Technology Project (2008 - 2008)

Project Introduction

Coherent Logix, Incorporated proposes the Software Defined Common Processing System (SDCPS) program to facilitate the development of a Software Defined Radio development kit based on HyperX Technology with an accompanying software development flow to support rapid development and fielding of this technology to NASA and high reliability system integrators. NASA's exploration, science, and space operations systems are critically dependent on the hardware technologies used in their implementation. Specifically, the performance and deployment of autonomous and computationally-intensive capabilities for space based observatories, orbiters, autonomous landing and hazard avoidance, autonomous rendezvous and capture, robotic, relative navigation, command, control and communications systems are directly dependent on the availability of radiation-tolerant, high-performance, reconfigurable and adaptable, modern communications and underlying energy-efficient processor technology. The HyperX Technology will simultaneously enable order of magnitude improvement in power savings while reducing chipset count, thus size and weight of the radio. The HyperX processor technology is fully programmable and reconfigurable on the fly and is supported by industry standards based [hardware agnostic software development flow and] programming model using ANSI-C and MPI (message passing interface) API. This provides reduced life-cycle costs and future proofing of hardware through fully portable software code.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
Coherent Logix, Inc.	Supporting Organization	Industry	Austin, Texas

Primary U.S. Work Locations	
Ohio	Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Michael Doerr

Technology Areas

Primary:

- TX07 Exploration Destination Systems
  - TX07.2 Mission Infrastructure, Sustainability, and Supportability
    - TX07.2.1 Logistics Management